[0020]   What is claimed is:

1. A method for reserving a non-volatile cache for explicit control by an application

comprising:

reserving a first portion of the cache for application memory requests based at least in part on

a predetermined set of functions that are supported by a driver for application calls; and

reserving a second portion of the cache for application memory requests.

2. The method of claim 1 wherein the predetermined set of functions comprises: Allocate, Get,

Set, and Free.

3. The method of claim 1 wherein the predetermined set of functions allow for direct or indirect

application calls.

4. A method for reserving a non-volatile cache for explicit control by an application

comprising:

reserving a first portion of the cache for application memory requests based at least in part on

a predetermined set of functions that are supported by a driver for application calls; and

reserving a second portion of the cache to be used as a disk cache.

5. The method of claim 4 wherein the predetermined set of functions comprises: Allocate, Get,

Set, and Free.

6. The method of claim 1 wherein the predetermined set of functions allow for direct or indirect application calls.

7. An apparatus comprising:

a non-volatile cache, coupled to a main memory and a mass storage; and

the non-volatile cache to support a predetermined set of functions that are supported by a driver for application calls and a bit is set and cleared per affected cache-line in the cache-line metadata in the cache and the data allocation is done on a cache-line granularity.

8. The apparatus of claim 7 wherein the predetermined set of functions comprise: Allocate, Get, Set, and Free.

9. The apparatus of claim 7 wherein the predetermined functions allow for direct or indirect application calls.

10. The apparatus of claim 7 wherein the apparatus is to be implemented in either: a memory controller, a chipset, or an application specific integrated circuit (ASIC).

11. The apparatus of claim 8 wherein the non-volatile cache, in response to an Allocate function, will:

determine whether a predetermined number of bytes can be reserved,

if so, to identify cache-lines to use to reserve the predetermined number of bytes,

flush the cache-lines if they are dirty and mark them as empty,

pin these cache-lines, and

return a pointer to a structure that identifies the cache-lines reserved for this request.

12. The apparatus of claim 8 wherein the non-volatile cache, in response to a Set function, will:

determine that input paramaters are valid (not null) and a data region referenced is in range,

identify the cache-lines to use,

copy data from a data Buffer to the applicable cache lines and mark these lines valid (not empty).

13. The apparatus of claim 8 wherein the apparatus is supervised by a driver in a software algorithm.

14. The apparatus of claim 8 wherein the non-volatile cache, in response to a Get function, will:

determine that input parameters are valid (not null) and a date region referenced is in range,

identify the cache-lines to use and determine if they are valid (not empty), and

copy data from the applicable cache lines into a data Buffer.

15. The apparatus of claim 8 wherein the non-volatile cache, in response to a Free function, will:

determine that input parameters are valid (not null),

unpin the cache-lines,

and Mark the cache lines as invalid

16. An apparatus comprising:

a non-volatile cache, coupled to a main memory and a mass storage; and

the non-volatile cache to support a predetermined set of functions that are supported by a driver for application calls and the cache is specifically utilized for an application and the non-volatile cache does not require pin bits.

17. The apparatus of claim 16 wherein the predetermined set of functions comprise: Allocate, Get, Set, and Free.

18. The apparatus of claim 16 wherein the predetermined functions allow for direct or indirect application calls.

19. The apparatus of claim 16 wherein the apparatus is to be implemented in either: a memory controller, a chipset, or an application specific integrated circuit (ASIC).

20. The apparatus of claim 17 wherein the cache, in response to the predetermined set of the functions, will:

reserve a section of the cache for the application; and

invoke a cache manager on a pre-reserved portion of the cache to support the predetermined set of functions.

21. An article of manufacture comprising:

a machine-readable medium having a plurality of machine readable instructions, wherein when the instructions are executed by a system, the instructions provide to manage a cache memory for:

allocating a first portion of the cache memory for application memory requests based at least in part on a predetermined set of functions that are supported by a driver for application calls; and

initializing at least one byte of the first portion of the cache memory in response to the predetermined set of functions;

reading at least one byte of the first portion of the cache memory in response to the predetermined set of functions; and

deallocating at least one byte of the first portion of the cache memory in response to the predetermined set of functions.

22.   The article of manufacture of claim 21 wherein the predetermined set of functions comprises: Allocate, Get, Set, and Free.

23. The article of manufacture of claim 21 wherein predetermined functions allow for direct or indirect application calls.